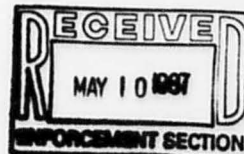


CLOSURE OF CONCRETE-LINED
SURFACE IMPOUNDMENT
NALCO CHEMICAL COMPANY
ODESSA, TEXAS
TXD095217766

4/87



REED & ASSOCIATES

Midland

Corpus Christi

Austin





REED & ASSOCIATES, INC.

April 21, 1987

Mr. Karsten Odland
Environmental Control Manager
Nalco Chemical Company
One Nalco Center
Naperville, Illinois 60566-1024

Dear Mr. Odland:

Attached please find our report on the closure of the concrete-lined surface impoundment which is located at Nalco's Odessa facility. Five copies of the report are included. Additional copies are available if needed.

Respectfully submitted,

REED AND ASSOCIATES, INC.

Hugh B. Robotham

CLOSURE OF CONCRETE-LINED SURFACE IMPOUNDMENT
NALCO CHEMICAL COMPANY, ODESSA, TEXAS
TXD095217766

INTRODUCTION

In December 1986 this firm was hired by Nalco Chemical Company to supervise and certify to the proper closure of a concrete surface impoundment which is located at their Odessa facility. The pond was used for collection and temporary storage of wash water from the plant's truck loading - unloading area and from the tankfarm. Nalco has decided to close the pond and to install two steel tanks for collection of the wash water from the facility. The Texas Water Commission (TWC) has approved a closure plan that was submitted by Nalco. The plan consists of removing all liquid and residue from the pond, decontaminating the pond by hydroblasting and steam cleaning, and advancing four soil borings around the perimeter of the pond.

The responsibilities of this firm consisted of advancing the soil borings, retrieving soil samples at the appropriate depths, shipping the soil samples to the analytical laboratory (chosen by Nalco), and to provide certification that the closure of the pond (with regard to the soil borings and the cleaning of the pond) was done according to the approved closure plan. The removal and disposal of the liquid and residue was done prior to this firm's involvement in the project.

All the field work associated with the closure of the pond has been completed. This report presents the results of the soil sampling and the cleaning of the pond.

SOIL BORINGS

Four soil borings were advanced along the perimeter of the pond. Their respective locations are shown on Figure 1. Three of the borings, CH-1, CH-2 and CH-3, were drilled to a depth of fifteen feet. The fourth boring, CH-4, was drilled until ground water was encountered. This occurred at a depth of twenty three feet. The total depth of this boring was twenty five feet. The static water level as measured in a water well just east of the pond is 23.19 feet below the ground surface.



Soil Samples

Soil samples were collected from each boring at intervals of 3' to 4.5', 8' to 9.5' and 13' to 14.5'. Additionally, samples from the deep boring were retrieved at 18' to 19.5' and 23' to 24.5'. A description of the soil in each boring is given in Appendix A. The soils material encountered consisted mainly of caliche with occasional limestone interbeds.

In retrieving the samples no unusual odor was apparent. The samples were preserved by wrapping them in plastic film and aluminium foil then freezing them in dry ice. The samples were shipped to Compuchem Laboratories, Inc. in North Carolina for analysis.

After the necessary samples were retrieved from the borings each hole was plugged with a slurry of neat cement.

Soil Analyses

The analytical work on the soil samples was done by Compuchem Laboratories, Inc. The samples were analyzed for the following organic compounds: naphthalene, acenaphthene, flourene, phenanthrene, di-n-butyl phthalate, toluene and ethylbenzene. The results were reported directly to Nalco and are discussed in greater detail in their report to the TWC. Copies of the results were sent to us for our review and are included as Appendix B. The data show that all the compounds of interest were below the detection limits.

CLEANING OF POND

As stated earlier, all the liquid and residue were removed from the pond prior to our involvement in the closure. The sides and bottom of the pond were cleaned by hydroblasting and steam cleaning. This procedure removed most of the oily stains but 100% removal was not accomplished. The bottom of the pond has been cleaned quite effectively. However, a few stains still remain on the sides especially at the water line.

The dirt removed from the bottom of the pond is being temporarily stored on site. This material awaits proper classification then it will be disposed of at an appropriate disposal facility.



It has been a pleasure working with Nalco on this project. If we can be of additional assistance in this or other matters, please do not hesitate to contact us.

Respectfully submitted,

REED AND ASSOCIATES, INC.



Hugh B. Robotham

Hugh B. Robotham

Ed L. Reed

Ed. L. Reed, P. E.



001001

APPENDIX A
(SOIL DESCRIPTIONS)

001002

[illegible][illegible]

ED L. REED & ASSOCIATES, INC.
CONSULTING HYDROLOGISTS
MIDLAND-CORPUS CHRISTI, TEXAS

001004

[illegible]

LOCATION Odessa, TX CASING _____
DATE _____ PERFORATIONS _____
WELL NUMBER CH-4 (Center of east side, 1.75' from edge)(26' from South end) DRILLER _____
ELEVATION _____

[illegible]

ED L. REED & ASSOCIATES, INC.
CONSULTING HYDROLOGISTS
MIDLAND-CORPUS CHRISTI, TEXAS